THE SCOPE

MAY-JUNE, 1957

PUBLISHED BY THE STUDENTS OF THE MASSACHUSETTS COLLEGE OF OPTOMETRY

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THE SCOPE

Graduation Issue

DEDICATED TO THE CLASS OF '57

VOLUME XXVIII NUMBER 5

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OPTOMETRIC NOTES

Newport, R. I., March 1

The U. S. Navy's Candidate School graduated its 30th class today in ceremonies aboard the naval station. Rear Admiral Thomas H. Robbins, Jr., President, Naval War College, Newport, R. I., spoke to the 935 new officers and presented the honor graduates with their certificates.

Among the graduates was Ensign Joel B. Spieglee of Brookline, Mass., who received his B. S. Degree in Optometry in 1956 from Massachusetts College of Optometry in Boston, Mass. To earn this commission he and his classmates had to successfully complete a eighteen-week, intense course of study and military indoctrination, which covered such subjects as navigation, engineering, seamanship, military justice, and naval weapons, having done so, the class members will now report to their respective ships and stations in the fleet and shore establishments of the Navy. Some will report first to further training which will be relative to their new duties, then on to their permanent duty stations.

431 of the class will report to ships of the fleet, 153 will go to aviation billets, and 67 have been ordered to engineering and staff corps duties.

The-Thirty-Third annual convention of Beta Sigma Kappa will be held at the Statler Hotel in Los Angeles, California, on Tuesday, June 25, 1957.

As has been the custom, it will be a luncheon meeting starting at 12:00 noon, followed by the business meeting.

* * * *

There were two cases in the same institution of delusions of grandeur.

An attendant said to the first of these, "What makes you think you're Napoleon?"

"God told me," he answered.

From an adjoining cell came the voice of the other, "I did not."

SUMMER EMPLOYMENT

The editors of SCOPE after considerable time, expense, and general "conning," were able to secure for those men who have a yearning, to get away from it all, to visit foreign lands, eat exotic food in mysterious settings — jobs with a future.

See if you can qualify. It is to your advantage to try and answer the following test:

1) When you play golf with an attractive young lady, do you have trouble keeping your eyes on the cups?

2) When you see two scoops of ice cream in your banana split do you think of Marilyn Monroe?

3) When a strange lady speaks to you on the street, do you feel like asking about a "pay later" plan?

4) When boarding a bus, if a girl wearing shorts has been waiting with you, do you let her step up first?

5) When you see a young girl wearing a dress that fits her like a glove, do you find yourself staring at the palm?

(devised by Robert Larr)

If you wrote "yes" to all the above questions, in all probability you will qualify, so turn to page 12 for complete information.

If you have all "nyet" for the above, try the John Hancock.

If you have mixed replies it is still not too late to see Dr. Wekstein.

A lawyer was sitting in his office one day when a woman entered unannounced and, without preliminaries, declared that she wanted a divorce.

"On what grounds?" the attorney asked.

She replied that she did not think her husband was faithful.

"And what makes you think he isn't faithful?" quizzed the attorney.

"Well," the lady replied, "I don't think he's the father of my child."

THE SCOPE

OFFICIAL UNDERGRADUATE PUBLICATION OF THE

MASS. COLLEGE OF OPTOMETRY

178 NEWBURY STREET

BOSTON, MASS.

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THE EYES HAVE IT

Sight-saving campaigns to conserve and improve employees' vision, increase working comfort and efficiency, and reduce eye accidents are winning many converts in industry. Unions, too, while shopping for benefit packages on which to spend their welfare funds, are pushing eye care as a bright new fringe benefit.

Where programs have been tried, striking results are reported. Fitting of shatterproof glasses, for example, has been found to cut eye injuries up to 87%. Vision improvements for a third of the employees tested are not at all unusual.

How would a company contemplating an eye-care program go about it? Let Raymond L. Ahern, Personnel Relations Manager of Greist Manufacturing (New Haven, Conn.), relate his company's experience:

Q. How did Greist happen to start an eye-care program?

A. We had embarked on a campaign to reduce our accident frequency, and we managed to cut it down from 6.6% to 2.9% overall. But in studying the statistics we noticed that the incidence of eye injuries did not fall along with the reduction in the over-all accident rate. So we brought in a consultant, Dr. Herman Kline, an expert in industrial vision from New Haven, Conn., to help us find the answer.

JOB STUDY

Q. How did Dr. Kline proceed?

A. He made a study of our jobs, operation by operation, and he checked the lighting. His purpose was twofold: to improve visual acuity, to improve work performance, and to prescribe safety glasses if the job to which a worker was assigned required it.

Q. What were some typical findings?

A. The study showed, for example, that in certain areas such as the press department or the heat treat room employees should wear glasses with protective side shields which would catch splashing acids. In the assembly area where it was originally thought that safety glasses were unnecessary, Dr. Kline found that straight flying parts did make them advisable.

Q. Were any problems encountered?

A. There was the usual resistance at first. But we used supervisors to explain the great safety advantages of wearing glasses. Incidently, we also embarked on a program of examining all employees to see if they needed corrective lenses. This program is still in progress.

THE SCREENING

Q. What kind of examination do they get?

A. We give them 12 standard tests of acuity, color vision, depth perception, vision at near and far points, vertical and lateral phoria (showing how the eyes work in relation to each other), and peripheral vision. These tests are built into a screening instrument and take only a few minutes to administer and score. Then employees are tested with a retino-scope to determine if there are visual defects which weren't uncovered by the screening device.

(Please turn to page 10)

BETTER VISION FOR GREATER SAFETY

P. N. DeVERE, O.D., D.O.S.*

I wonder if you have ever been on the scene immediately after an automobile accident, or at the Police Station where drivers are being held for questioning following an accident.

If you have on very many occasions, I am sure you have heard repeated again and again tragic words like these:

"I didn't see."

"I didn't see the child crossing the street."

"I didn't see the other car."

"I didn't see the stop sign."

In thousands of cases every year this realization "I can't see well enough" comes all too late.

There are a vast number of reasons why you fail to see; you may be driving too fast. There may be an obstruction. Lights of an approaching car may blind you. Worst of all, your own vision may be inadequate. None of these is a valid excuse. When you are driving it is your business to see—to see everything necessary—to drive without injury to yourself or to anyone else. Yes, seeing properly is a fundamental necessity for safe driving, yet vision is one of the most seriously neglected aspects of highway safety. It is neglected by the driver himself and by many highway officials who pass on the driver's qualifications when issuing his license.

Poor vision by the automobile driver is of course only one of the many contributing factors in accidents but it is an important one.

No exact figures are available at the present time as to the exact percentage of accidents caused by poor visual skills of the driver but it is assumed to be a fairly large one. Research in this area as a rule must be of a laboratory type because testing of the visual skills at the time of the occurrence of an accident is an impossibility and autopsies or post-mortem examinations would reveal nothing in so far as visual skills are concerned.

It is interesting to consider for a few minutes the tremendous demands put upon the human eye in order for us to see in this modern civilization in which we live. Not too many centuries ago man lived by eyes, using them to hunt with and for the meager necessities of life. Compare the use of the eyes of your great-grandparents and mine. There were no electric lights, very few books to read, very few fast moving industrial machines to operate, no movies, no telephone, no airplanes and of course no automobiles. The development of all of these things and others, which we now take for granted in our modern civilization, have made ever increasing demands upon the human eye. To my knowledge we have made no improvement in the visual mechanism of the human body. It is the same structure with the same functions that the Romans used to drive their chariots down rock pathways. This same human eye is now used to operate a motor vehicle under all kinds of conditions at tremendous speeds. In my opinion, civilization has developed faster than the human eye can compensate, hence we find more and more people needing corrective glasses in order for them to adapt themselves to their environment.

We served aboard an Aircraft Carrier in World War II, my duties in the combat zone were primarily those of training Navy Pilots to recognize enemy aircraft. The speed of the airplane ten years ago was so fast that the eyes could not always recognize friend from enemy. Think of how this speed has been increased.

Now let us come to this problem of today's highway. Unceasing research has continuously increased the power of gasoline; years of painstaking research and millions of dollars have gone into the development of the modern motor car which is truly a marvel of engineering perfection. Our roads give us endless stretches of ribbon smooth concrete. Everything that pertains to motoring is as perfect as science can make it, everything perfect in this picture except us human beings.

"Man is indeed a strange creature." He expects and demands perfection of his mechanical creations, but he will sit behind the wheel of one of these creations which travel often at a mile a minute with eyesight that's defective.

(Please turn to page 8)

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Cont. next page ☞

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A patient of an asylum who had been certified cured was saying goodbye to the director of the institution.

"And what are you going to do when you go out into the world?" asked the director.

"Well," said the ex-patient, "I have passed my bar eaminatioxns, so I may try to work up a law practice. Again, I had quite a bit of experience with dramatics in college, so I might try my hand at acting."

He paused and thought for a moment.

"Then on the other hand," he continued, "I may be a teakettle."

* * * *

A Texan entered the saloon with his wife and six-year-old boy and ordere two whiskies.

"Aint' Ma drinking? asked the kid.

BETTER VISION

(Continued)

He'd be loud in his complaints if the car itself had a defect as equally dangerous; but year after year he drives along without having his eyes examined. He of course has the oil checked and the car greased at certain intervals.

Well *maybe* he drives year after year. But maybe he doesn't because one day, he suddenly becomes just a mathematical unit—a part of the percentage of the accidents which occur every year because of poor visual skills of the driver.

Today, inadequate vision is an entirely unnecessary handicap to safe driving.

There should be no drivers with inefficient vision on the road. The answer to this problem is simply the discovery and correction of those cases needing attention. There need be no wholesale cancellations of drivers' licenses, as is feared by many drivers and officials charged with making and enforcing safety laws, because most visual inefficiencies can be corrected by modern optometric science.

Vision is the net sum of all the factors that go to make efficient seeing. Therefore, safe vision, from the standpoint of driving, is made up of several essential visual skills. Let's consider them separately:

ACUITY—When you look at an object, you must be able to see it clearly, without blur. That is visual acuity. You must have acuity to be able to focus clearly and quickly on objects from a few feet to many yards ahad of you. THE AMERICAN OPTOMETRIC ASSOCIATION considers 20/40 vision a minimum requirement for one to see clearly enough to drive safely. This means that one can only see letters on a test chart at 20 feet that he should be able to see at 40 feet.

Consider the very best road conditions, with good handling, dry pavement, clear weather, and unobstructed vision, a car going 25 miles an hour travels about 62½ feet before it can be stopped. Under the same conditions, a car traveling 50 miles an hour covers 250 feet before the wheels stop rolling. When the speed reached 70 miles an hour, the driver finds himself 436 feet, or more, beyond the place

where he first applied the brakes. Snow doubles the stopping distance, and ice requires up to five times the stopping distance necessary for dry pavement.

When a driver is handicapped by less than 20/40 vision, these stopping distances, both for clear and stormy weather, are greatly increased. The average traffic sign with five inch inch letters can be read at about 280 feet by the driver who has 20/20 vision by the Snellen chart. The driver with 20/40 vision must approach within 113 feet of the sign before he can read it. The driver with only 20/50 vision must approach to 90 feet before he can see the sign clearly.

It is probable that the inability to read road signs, due to inadequate vision, may account for thousands of accidents on road crossings, for if a car is being driven at a speed of 60 miles an hour, a driver with 20/50 vision will be 90 feet from such a sign before he sees it clearly, and, under the best road conditions, he will be 227 feet *beyond* the sign before he is able to stop.

This illustration shows that too much emphasis cannot be placed on the importance of adequate vision in highway safety.

DEPTH PERCEPTION—You must be able to judge relative distances and to locate objects properly in space—see them where they actually are. For instance, suppose a driver sees a car approaching, but, before meeting it, he wants to pass three cars ahead of him. After getting about half-way past these cars, he finds that he has misjudged the distance of the approaching car. To prevent a collision, he faces two alternatives. He can either cut in on the car that he was passing, or force the oncoming car off the road.

Many accidents do happen every day from this very lack of ability to judge correctly the distance of approaching cars.

The ability to make this judgement correctly is good depth perception, which is a visual skill that requires good teamwork of the two eyes.

FIELD OF VISION—You must be able to see over a large area without moving your eyes or your head. This visual skill is important because many highway hazards must be seen from the side if they are to be avoided, particularly at highway crossings, where a large proportion of all accidents occur. If your eyes are focussed on the highway ahead, you must be able to notice the car that approaches from the side, or the pedestrian who may begin to cross ahead of you.

An accident can be caused by "tunnel vision," in which case the driver's field of vision is like a small tunnel, and he sees only straight ahead, little or nothing to left or right, up or down. A driver with this visual problem is not only dangerous to himself, but represents a traveling hazard to every other driver on the road.

NIGHT VISION—Some drivers can see much better than others at night. The most dangerous hours on the highway are just before sundown. For some drivers, dusk blots out as much as late darkness does for others. They suffer from "night blindness." The night fatal accident rate per mile of travel is three times as high as the day rate.

When the automobile developed into the high speed, high power vehicle we know today, the driver's night vision problem became more acute. He must be able to see well ahead of his vehicle. He must see fixed and moving hazards that may affect him. Headlight glare, too, has complicated the task of seeing for the large proportion of our population that drives at night.

Night driving demands three important visual skills; (1) the ability to see efficiently under low illumination, (2) the ability to see against glare, and (3) rapid recovery after being blinded by the glare of oncoming headlights.

These are the most important elements of safe highway vision. Some drivers are below normal in one or more of these skills. It is important, therefore, for the driver to know any deficiencies he may have. Then he can, and should, have them corrected, or, if that is impossible, he should learn to make allowances for his particular inefficiencies.

Greater consciousness of vision is the principal requirement for improvement.*

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*Chairman, Motorists' Vision and Highway Safety Committee — American Optometric Association, Morganton, N. C.

THE EYES HAVE IT

(Continued)

Q. What's the screening device called?

A. We use the Keystone Telebinocular, a small portable instrument that you can put on a desk. It has a built-in height adjustment so the employee can look into it at a comfortable angle. He then answers questions on what he sees on a set of targets.

(Editor's Note: In addition to the Telebinocular, there are two other sight screening instruments in wide use in industry: Bausch and Lomb's Ortho-Rater and American Optical's Sight-Screener.)

Q. Why not use a wall chart? Isn't that just as good?

A. The familiar wall chart, known professionally as the "Snellen" test, is becoming as outmoded as a Model T. Eye specialists tell us that "20-20 vision" may have little relevance to the eye performance needed by industry today. A person can have perfect vision and still incur eye strain that will cause headaches and fatigue on the job.

It may be, for example, that the person has been wearing corrective lenses that gave efficient vision at one distance but not at the distance from which his operation is conducted.

Q. What if an employee is found to need glasses?

A. We refer him to an optometrist or ophthalmologist of his own choosing. A report is made in writing to the employee's own doctor—a description of the job and visual skills required. Afterwards, the correction is checked to see if it is adequate for the job. Incidently, the local eye men were a little apprehensive about our program when it was getting under way. But after they found out that we were just screening eyes for evidence of visual deficiencies and weren't diagnosing, they were all for us.

COSTS AND FINANCING

Q. How much time does the optometrist put in?

A. He's here two mornings a week—8 a.m. to 12. He examines approximately 12 persons a morning. After the initial screening is over, however, he will probably reduce his schedule.

Q. I understand the screening takes only a few minutes per employee. What else does the optometrist do?

A. He takes the facial measurements of each employee so the proper safety goggles can be ordered. If the employee is wearing prescription lenses, the correction is incorporated into the safety goggles. Adjustments of these goggles are made regularly and the visual consultant spends part of each morning performing these duties. To insure accuracy of referral, Dr. Kline takes a case history and measures the refractive status of the eyes with a retinoscope. There are the reports to the doctors and the checkup on the correction received by employees referred to eye men. The consultant also may discuss visual problems with employees and supervision. He makes it a point, however, never to interfere with the relationship between the employee and his own doctor. He advises employees and steers them to the proper channels.

Q. What about the equipment—is it costly?

A. Our initial investment was small because we already had the Keystone machine.

(Editor's note: Stereoscopic screening devices cost $475 for the Bausch & Lomb and American Optical instruments or $495 for the Keystone instrument, which includes test, scoring and referral cards. Bausch & Lomb also make a modified version of its Ortho-Rater, without the height adjustment, for $250. The manufacturer claims this is adequate for screening in plants with less than 300 employees. American Optical will also provide its machine on a yearly rental basis.)

SOME RESULTS

Q. Have you gotten statistics on what percentage of persons who didn't previously wear glasses actually were found to need them.

A. Our screening is still going on. But we did find that in the first batch of supervisors we examined, 60% needed glasses. Of course, some of them already had them.